Report Date: 01 Feb 2013

Summary Report for Individual Task
071-329-1014
Locate an Unknown Point on a Map and on the Ground by Intersection
Status: Approved

Condition: As a member of a patrol team, you are given a 1:50,000-scale military map, a magnetic compass, a military protractor, a pencil, paper, an item with a straight edge such as a ruler or folded piece of paper, at least two well-defined points on the ground that can be located on the map, an observed unknown point, and a requirement to determine the location of the unknown point on the map. Some iterations of this task should be performed in MOPP.

Standard: Determine the grid coordinates of the unknown point to within 100 meters; include the two-letter 100,000 meter square identifier using either the map and compass method or the straight line method.

Special Condition: None

Special Standards: None

Special Equipment:

Safety Level: Low

MOPP: Sometimes

Task Statements

Cue: None

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: Intersection is the location of an unknown point by occupying at least two (preferably three) known positions on the ground (either successively by one Soldier or simultaneously by two or more Soldiers), then plotting on the map the grid azimuth of each of these known points to the unknown point, and identifying the point on the map where the lines intersect. It is used to locate distant or inaccessible points or objects such as enemy targets and danger areas. There are two methods of intersection: the map and compass method and the straightedge method.

Performance Steps

1. Identify an unknown point on a map by intersection using the map and compass method (Figure 1).

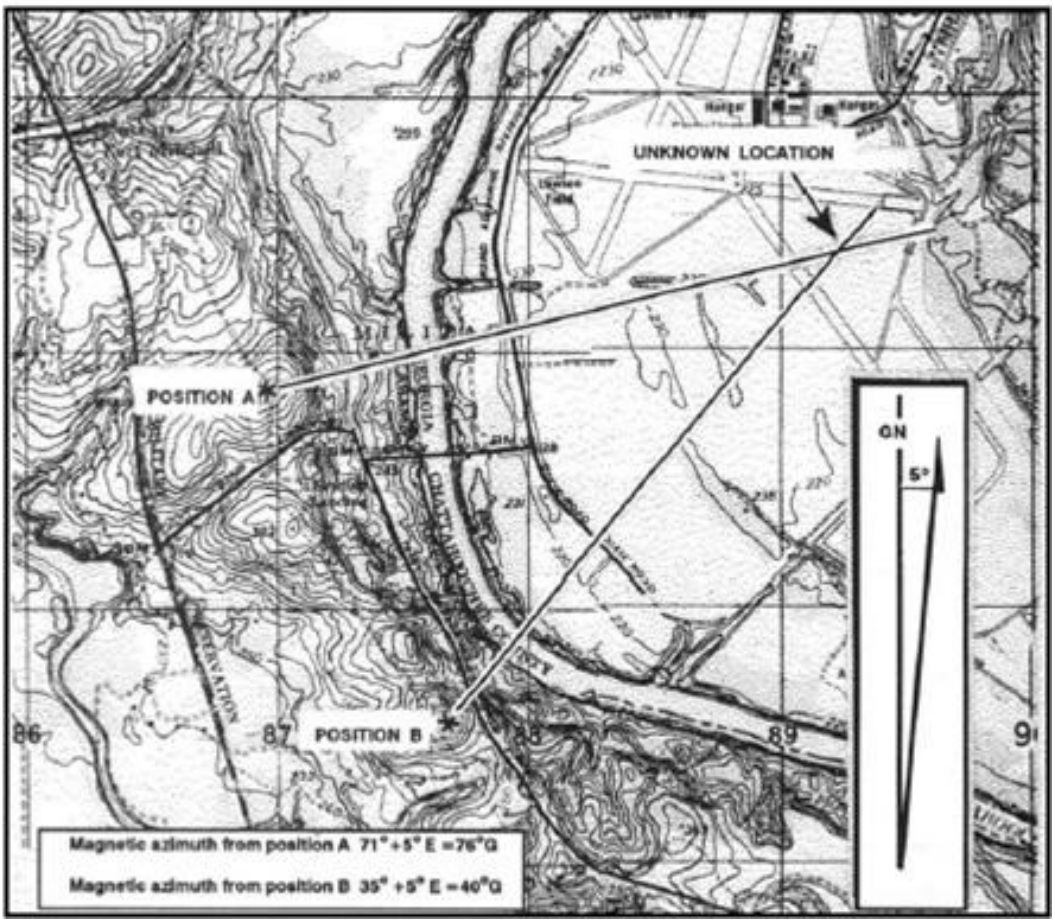

Figure 1. Intersection using the map and compass method.

a. Orient the map on a flat surface using a compass.

b. Plot grid azimuths from known points to the unknown point on the map.

(1) Mark your position (the observers) on the map.

(2) Determine the magnetic azimuth from your position to the unknown point.

(3) Convert the magnetic azimuth to a grid azimuth.

(4) Place the index point of a protractor on your plotted position.

(5) Align the protractor's 0 to 180-degree line to the top of the map's north-south grid line.

(6) Ensure the 0-degree mark is pointing to the north (or top of map).

(7) Place a tick mark on the map beside the number on the protractor that corresponds to the computed grid azimuth.

(8) Draw a straight line from your plotted position to the tick mark and beyond.

(9) Repeat steps 1b(1) through 1b(8) for each observer position.

c. Identify the point where the lines intersect as the location of the unknown point.

d. Determine the grid coordinates to this location to the desired accuracy.

2. Identify an unknown point on a map by intersection using the straightedge method (Figure 2).

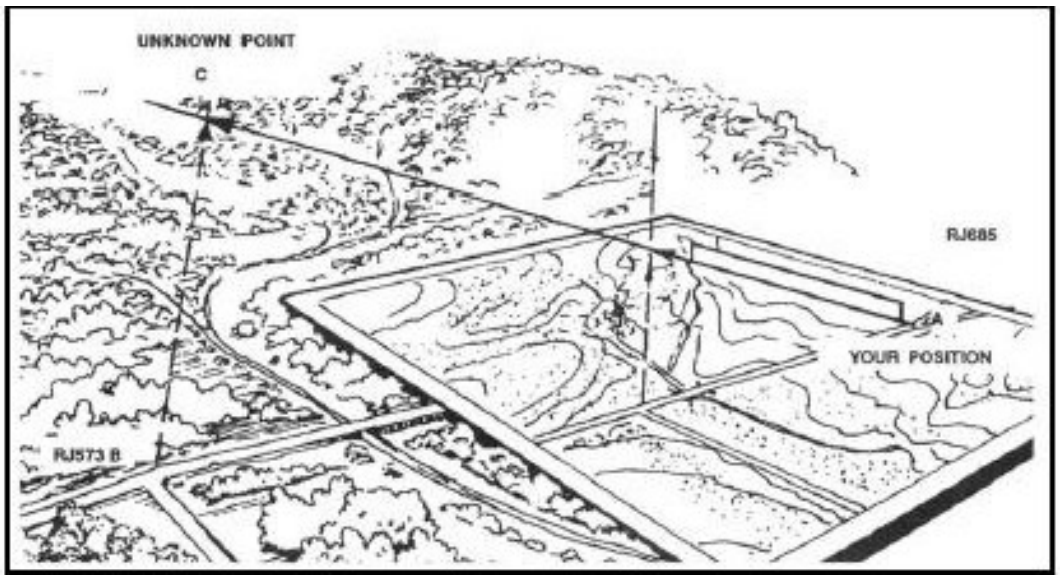

Figure 2. Intersection using the straight edge method.

a. Orient your map on a flat surface using terrain association.

b. Mark your position (the observers) on the map.

c. Draw an intersection line for each of these plotted points.

(1) Lay a straightedge on one of the two known observer points on the map.

(2) Rotate the straightedge on the map until the straightedge lines up with both the known observer position on the map (point A and point B in Figure 2) and the unknown position in the distance (point C in Figure 2).

(3) Draw a line along the straightedge from the known observer position toward the unknown position on the ground.

(4) Repeat steps 2c(1) through 2c(3) for each plotted point.

d. Identify the point where the lines intersect as the unknown location.

e. Determine the grid coordinates to this location to the desired accuracy.

(Asterisks indicates a leader performance step.)

Evaluation Preparation: SETUP: Provide the Soldier with the equipment and/or materials described in the conditions statement.

BRIEF THE SOLDIER: Explain what is expected of the Soldier by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Identified an unknown point on a map by intersection using the map and compass method.			
2. Identified an unknown point on a map by intersection using the straightedge method.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	FM 3-25.26	MAP READING AND LAND NAVIGATION	No	Yes

Environment: Environmental protection is not just the law, but the right thing to do. It is a continual process and starts with deliberate planning. Units will assess environmental risk using the checklist and assessment matrixes in TC 3-34.489 and FM 3-34.5. Always be alert to ways to protect our environment during training and missions. In doing so you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Prerequisite Individual Tasks : None

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
071-COM-1000	Identify Topographic Symbols on a Military Map	071 - Infantry (Individual)	Approved
071-COM-1002	Determine the Grid Coordinates of a Point on a Military Map	071 - Infantry (Individual)	Approved

Supported Individual Tasks :

Task Number	Title	Proponent	Status
071-COM-1006	Navigate from One Point on the Ground to another Point while Dismounted	071 - Infantry (Individual)	Approved
052-193-3027	Conduct a Demolition Reconnaissance	052 - Engineer (Individual)	Analysis Completed
171-300-0082	Employ Common Operational Terms and Graphics at Platoon Level	171 - Armor (Individual)	Approved

Supported Collective Tasks :

Task Number	Title	Proponent	Status
05-4-0823	Breach a Window With Explosive Techniques	05 - Engineers (Collective)	Approved
07-5-1001	Conduct Surveillance	07 - Infantry (Collective)	Approved
07-5-1104	Conduct Waterborne Insertion	07 - Infantry (Collective)	Approved
34-5-0343	Conduct Intelligence Team Post-mission Activities	34 - Combat Electronic Warfare and Intelligence (Collective)	Approved
34-4-0030	Emplace Unattended Ground Sensors (UGS)	34 - Combat Electronic Warfare and Intelligence (Collective)	Approved
07-5-1397	Establish a Drop Zone for USAF Aircraft using Computed Air Release Point	07 - Infantry (Collective)	Approved
05-4-0826	Breach a Wall With Manual Techniques	05 - Engineers (Collective)	Approved

07-5-1004	Assess Damage	07 - Infantry (Collective)	Approved
06-5-2017	Perform Crater Analysis	06 - Field Artillery (Collective)	Approved
05-4-0822	Breach a Door With Manual Techniques	05 - Engineers (Collective)	Approved
07-5-1401	Conduct an Evasion	07 - Infantry (Collective)	Approved
03-4-1017	Monitor CBRN and Obscuration Missions	03 - CBRN (Collective)	Approved
07-5-1398	Establish a Drop Zone for USAF Aircraft using Ground Marked Release Point	07 - Infantry (Collective)	Approved
34-5-0248	Prepare for Target Exploitation (TAREX)	34 - Combat Electronic Warfare and Intelligence (Collective)	Approved
34-4-0031	Recover Unattended Ground Sensors (UGS)	34 - Combat Electronic Warfare and Intelligence (Collective)	Approved
05-4-0824	Breach a Window With Manual Techniques	05 - Engineers (Collective)	Approved
05-4-0825	Breach a Wall With Explosives	05 - Engineers (Collective)	Approved

ICTL Data :

ICTL Title	Personnel Type	MOS Data
MOS 31B, Military Police, Skill Level 1, Individual Critical Task List	Enlisted	MOS: 31B, Skill Level: SL1, Duty Pos: LCG
11A Officer Lieutenant, Version 1.00	Officer	AOC: 11A, Rank: 1LT
11B10, Infantryman - Version 1.00	Enlisted	MOS: 11B, Skill Level: SL1